

CLAIMS

What is claimed is:

- 5 1. A wear protection device for a musical wind instrument comprising of:
at least one solid wear-resistant non-metallic interface insert positioned at
any location of the musical instrument where separate sections of the
musical instrument may come into contact with each other during normal
operation of the musical instrument and wherein the interface insert
10 prevents direct contact between surfaces of different sections of the
musical instrument.
2. A wear protection device of claim 1 wherein:
at least one section of a musical instrument, which section during normal
operation of the musical instrument may come into contact with another
15 section of the musical instrument, has an end point with a groove capable
of slidingly receiving the interface insert and wherein the interface insert
protrudes beyond the end point of the section of a musical instrument.
- 20 3. A wear protection device of claim 1 wherein:
a tubular interface insert is positioned between posts and a shaft wherein
the individual post could be either a support post or an end post and the
shaft passes through at least one support post and/or terminates at at least
one end post and wherein the tubular interface insert has an internal
diameter that is substantially equal to the external diameter of the shaft.
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4. A wear protection device of claim 3 wherein:
at least one post has at least one end point that may come into contact with
a tubular tubing section of the musical instrument and wherein the tubular
interface insert protrudes beyond such end point of the post thereby
preventing direct contact between the post and the tubular tubing section.
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5. A wear protection device of claim 1 wherein:
the interface insert is a cone shaped bearing positioned between a mating
end of the shaft and at least one support or end post wherein the post has
an axial conical cutout for receiving the cone shaped bearing interface
insert.

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6. A wear protection device of claim 1 wherein:
a roller housing has a first end and a second end while a roller receiver has
a first end and a second end, wherein the first end of the roller housing is
coupled to the second end of the roller receiver during normal operation
of the musical instrument and wherein the second end of the roller receiver
has a groove capable of slidably receiving the interface insert and
wherein the interface insert protrudes beyond the second end of the roller
receiver thereby preventing direct contact between the second end of the
roller receiver and the first end of the roller housing.

7. A wear protection device of claim 6 wherein:

the second end of the roller receiver has an annular groove capable of
slidably receiving an annular interface insert and wherein the annular
interface insert protrudes beyond the second end of the roller receiver
thereby preventing direct contact between the second end of the roller
receiver and the first end of the roller housing.

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8. A wear protection device of claim 1 wherein:

a tubular roller interface insert is positioned between a roller housing and a
roller bolt wherein the roller bolt and the tubular roller interface insert are
housed within the roller housing and wherein the external diameter of the
tubular roller interface insert is substantially equal to the internal diameter
of the roller housing while the internal diameter of the tubular roller
interface insert is substantially equal to the external diameter of the roller
bolt.

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9. A wear protection device of claim 8 wherein:

the roller housing has a first end and a second end while a roller receiver
has a first end and a second end, wherein the first end of the roller housing
is coupled to a roller receiver during normal operation of the musical
instrument and wherein the tubular roller interface insert protrudes beyond
the first end of the roller housing thereby preventing direct contact
between the first end of the roller housing and the second end of the roller
receiver.

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10. A wear protection device of claim 8 wherein:

the second end of the roller receiver is coupled to the first end of the roller housing during normal operation of the musical instrument and wherein the second end of the roller receiver has a groove capable of slidably receiving an interface insert and wherein the interface insert protrudes beyond the second end of the roller receiver thereby preventing direct contact between the second end of the roller receiver and the first end of the roller housing.

10 11. A wear protection device of claim 10 wherein:

the second end of the roller receiver has an annular groove capable of slidably receiving an annular interface insert and wherein the annular interface insert protrudes beyond the second end of the roller receiver thereby preventing direct contact between the second end of the roller receiver and the first end of the roller housing.

12. A wear protection device for a musical wind instrument comprising of:

at least one solid wear-resistant non-metallic annular interface insert coupled to at least one end point of at least one tubular tubing section of the musical instrument wherein the annular interface insert has an internal diameter that is equal to an internal diameter of the tubular tubing section to which the annular interface insert is coupled to.

13. A wear protection device of claim 12 wherein:
- at least one end point of at least one tubular tubing section of the instrument has a groove capable of slidingly receiving an interface insert and wherein the interface insert protrudes beyond the end point of the tubular tubing section.
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14. A wear protection device of claim 13 wherein:
- at least one end point of at least one tubular tubing section of the instrument has an annular groove capable of slidingly receiving an annular interface insert and wherein the diameter of the annular internal groove is substantially equal to the external diameter of the annular interface insert and wherein the annular interface insert protrudes beyond the end point of the tubular tubing section.
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15. A wear protection device of claim 14 wherein:
- the end points of adjacent tubular tubing sections, which end points may come into contact with each other during normal operation of the musical instrument, each have an annular groove capable of slidingly receiving the annular interface insert.

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